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ABSTRACT

A low cost approach to measuring materials availability in small- or medium-sized libraries using an interview questionnaire is described in detail, along with an application of this approach. A rationale for using this method is provided, as well as guidelines for conducting such a survey. Facets of the study are discussed, including objectives, methods of estimating availability, design criteria, staff and materials commitments, the purpose of each of the six questions, when and how to administer the questionnaire, the method of coding and scoring responses, test limitations, and interpretation of results. Sample questionnaires, scoring instructions, and a scoring sheet are provided. A description of a study conducted at the Champaign Public Library and Information Center in March 1979 to evaluate the test instrument and user response to it is appended. This report covers procedures for conducting the interview, sampling of library patrons, and the results of the survey, including responses used, types of materials requested, the success and failure rates of materials by class and item, and the cost of the survey. Eleven tables and a list of 36 references are provided. (RBF)

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Materials Availability in Small Libraries: A Survey Handbook

by

Eugene Wiemers, Jr.

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ABSTRACT

This paper describes in detail an approach to measuring availability of materials in a small- or medium-sized library. It is designed to provide a librarian without computing facilities and elaborate equipment a relatively inexpensive answer to the question: "What is the likelihood that a particular book is owned by the library and available for use when it is needed by a user?" Also suggested is an approach to measuring availability by type of material in addition to that of individual items. The main body of the text presents a discussion of the literature on document delivery measurement, the considerations upon which this short interview/questionnaire method is based, detailed instructions for implementation of this survey, and comparative data needed to put results of this measure in context. Sample questionnaires and instructions for scoring are included. The text is followed by an appendix demonstrating the application of the instrument in a medium-sized public library. The principal objective of this handbook is to suggest an approach to library use measurement that seeks low-cost methods to provide useful information for developing library policies.

INTRODUCTION

Providing materials to users on demand is generally considered to be one of the principal obligations of libraries. This paper presents an approach to the evaluation of a library's performance in delivering materials to users. The definitions of document availability employed in this approach are widely used, and the methodology applied—that of interviewing users about their actual demands—is not unique. This particular method has been developed to meet some very stringent requirements, however. It is designed primarily with the small- to medium-sized public library in mind, where it is expected that the librarian will not have large amounts of money or time to commit to a document delivery study, and will not have access to computers to compute and tabulate final results. The approach is not one of general evaluation of the library's services, but rather one which aims directly at evaluating satisfaction of users' demands for materials.[1]

In a recent survey of the literature on evaluation of library use, Robert W. Burns has suggested a number of minimum requirements for adequate evaluation. He says that three types of data should be required: (1) demographic data on the composition of the user population; (2) preferential data on what the user's opinions are about the services the library offers and its success in delivering those services; and (3) behavioral data on the

choices users make in approaching and responding to the library. Burns's conception of a proper study is one which is multifaceted, dealing with many aspects of the library's services; continuous rather than a one-time affair; and communitywide, i.e., it should evaluate users and nonusers of the library. In addition, Burns argues that the survey should cover a wide variety of responses to the user, and should not be limited to one type of research tool; it should include oral interviews and phone interviews, as well as questionnaires.[2] The list Burns presents of requirements for availability study is certainly admirable, but it implies by its very length a costly and complicated study. It also implies a study aimed primarily at research interests in the field of document delivery rather than at the interests of library managers.

The manual presented here is almost exactly the opposite of what Burns suggests. It considers only the single aspect of document delivery. It uses only one method of survey—an interview-questionnaire. It allows for only binary (*yes-no*) responses to the questions it asks. These restrictions are all deliberate. By limiting the questions to the single aspect of document delivery, the time needed to complete the survey is very short. This, combined with a brief interview, allows the response rate to be very high, so that interviews are not wasted by users' failure to report the availability of materials they seek. The *yes-no* format is adopted because delivery of books and other library materials is essentially a binary process—either the material is found by the user or it is not. This approach may not serve the interests of comprehensive library research, but it does provide direct information on the functioning of the single aspect of the library it proposes to measure. While the librarian might be interested in the age, sex and income distribution of the patron population, unless this information can be translated into reliable probabilities of materials requests, it is not very useful in evaluating document delivery services. At some future time, such a predictive model may be developed by the comprehensive research Burns suggests. The aim of the test presented here is more modest. It is designed to provide a simple and effective measure of the ability of the library to provide materials demanded, and to indicate whether further investigation or remedy is needed. The librarian faced with the question "How come the book I want is not on the shelf?" may ultimately be interested in predicting demand for materials, but in the meantime he/she may be satisfied with identifying whether the problem is one of two few titles owned by the library or of too few copies of titles already owned.

It should be remembered that immediate delivery of materials is the ideal to which most librarians aspire, but that this ideal is certainly unattainable; and approaching it is not cheap.[3] It is the nature of users that demands will

not be uniformly distributed over subjects, but will cluster on popular items or subjects. Even bookstores cannot always provide immediate access when items are for sale, and it is probably unrealistic to expect libraries to do as well for free. On the other hand, availability can be altered, so the purpose of this handbook is to suggest a convenient way to measure the dimensions of the problem.

HANDBOOK

Test Objectives

The objective of this simple survey is to estimate the availability of materials in the library. This will be expressed as an *availability rate*, which is the probability that a user seeking an item or group of items in the library will find it when he/she wants it. To provide a broad and accurate estimate of this rate, users' demands are divided into "item" requests and "class" requests. Item requests are demands by users for individual known books, records, periodicals, or other specific pieces of material the library might hold, which the user knows about before coming to the library. "Class" requests are demands for one or more items belonging to any group of similar materials. This may include, for example, books or materials on a common subject, materials of a specific genre, materials by the same author, or some other group of materials definable to the user. The important distinction is that item requests are for one known item, while class requests are for one or more of several similar items.

Availability has been broken down in the library literature into two parts. The question of whether the library owns the material requested can be reformulated to state the probability that the library holds the material. This is called here the *holdings rate*. A separate question is whether the material owned by the library is on the shelf available for use at the time the user requests the material. This may be reformulated as the probability that material owned by the library is on the shelf at any given time. This is called here the *shelf rate*. The *availability rate* is the product of these two probabilities, and is the probability that an item or group of items is owned by the library *and* on the shelf when requested by a user.[4]

Although many surveys of materials availability have been done, they have remained largely in the realm of the academic study of librarianship rather than in the domain of library management. Most often, questions about materials availability have been incorporated into larger studies of library performance and have thus been limited to institutions with access to the

researchers and research funds that large-scale surveys require. Where studies have been developed on a more modest scale, they have generally been studies of the shelf availability of individual items in the library.[5] The applicability of previous surveys to small- or medium-sized public libraries has been limited by both the cost and the design of the instruments. Most library administrators simply do not have large research grants to conduct studies of materials use, and would rather spend funds on purchases or personnel. The survey presented here was developed to provide an inexpensive and straightforward tool for a librarian to use to determine the magnitude of a materials availability problem (if one exists), to identify whether the problem stems from inadequate holdings of the library or insufficient numbers of copies of materials already owned, to relate availability problems to actual patterns of use of the library, and to provide an indication of what remedy or further study may be necessary to improve the availability of materials.

The survey outlined here will provide the following statistics:

1. *Item holdings rate*—the probability (expressed in the form 0.00) that an item demanded by a user will be owned by the library.
2. *Item shelf rate*—the probability that an item owned by the library is on the shelf when it is requested.
3. *Item availability rate*—the item holdings rate multiplied by the item shelf rate, the probability that an item is owned and on the shelf when requested.
4. *Class holdings rate*—the probability that the library owns materials in classes demanded by patrons.
5. *Class shelf rate*—the probability that a class of items owned by the library is on the shelf when requested.
6. *Class availability rate*—the class holdings rate multiplied by the class shelf rate; the probability that a class of items is owned and on the shelf when requested. The concept of class availability is partly subjective. The implication is that "enough" of the material of a class is owned or on the shelf or both to satisfy the user's demand. Users will have varying notions of how much is "enough." This is intentionally vague because what is important is whether the patron is satisfied, however vague the request, not whether there are one, two, three, or whatever number of items of the class on hand.

Of course, it is impossible to describe availability of materials unless users' demands are first accurately described. This survey first asks the user to describe his/her approach to library materials (by item, by subject, by type of material, or by format), and then to report the success or failure of the

search. Because of this, the survey also provides a breakdown of user demands by type of material and type of request. This information may be useful to the librarian apart from its impact on materials availability. Finally, the survey gives information on materials availability within classes of works held by the library and will aid in the identification of problem areas.

Testing Methods

Two general methods of estimating availability have been used. The first method, which is not used here, is to draw a sample list of items from a standard list of materials or from a source of citations on a subject and compare this sample with the holdings and shelf inventory of the library being studied.[6] To do this, the librarian or researcher must choose some standard from which to select a sample for comparison. For a specialized library the choice of a standard may be unambiguous, as in Orr's study of medical libraries: a citation pool was chosen from works cited by biomedical researchers. For a general library the choice of a standard is not obvious, for the researcher must estimate the tastes of the population the library serves and try to find some standard to match. Or, as in the case of the DeProspo study, a sample may be drawn from a source listing a very wide range of materials, in which case the likelihood that a small institution will hold a substantial fraction of the sample of citations is very small.[7] Even if the researcher makes no conscious estimate of the tastes of the community, the assumption must be made that the interests of the users of the library being studied have the same distribution as the standard from which the sample is drawn, if the survey is to be used as a measure of how well the library serves its patrons.

The second method, and the one that will be employed in this survey, is to ask users what they want and whether they find it in the library.[8] Some librarians might suppose that this would be a direct method to discover patron demands, but in fact it is another form of sampling. If patrons who enter the library are asked about what they want, they might tell the researcher only what they want at the time they enter. The researcher must then make the assumption that their demands are representative of the entire user population. Furthermore, the demands actually made by users who enter the library are only a small part of the demands they might make. Finally, there are people in any community who presently are not library users but who might become users if the library were better suited to their needs. These people are not included at all. Therefore, asking actual users of the library what their demands for materials are is, in fact, drawing a sample from a pool of present and possible demands of present and possible users.[9]

It can also be argued that actual user demands on the library may reflect materials and services users expect the library to supply, which in turn may reflect what the library has provided in the past. Orr argues that user surveys measure only "manifest demand" and do not measure information needs that are not brought to the library. Even circulation figures may represent unfilled demands in the sense that users may be willing to settle for what the library has, even though what is desired is not held or not available.[10]

Despite the limitations outlined, a survey of user demands is employed in the test described here. The problem of selecting a standard for an individual public library from which to draw a sample of citations has not been satisfactorily solved, because such a standard must represent the demands of the individual community the library serves. A sample of actual demands represents at least some part of the community, and can be verified by taking larger or successive surveys. A survey will also give direct information about the form or level of generality in which demands are made, which will inform even the most astute librarian about the tastes of the library's users and the nature of their demands. Circulation figures provide direct information to the librarian on what users are able to find in the library. A survey of what patrons want and are not able to find will provide information so the librarian may better serve users.

Test Design

The objective in developing the survey technique presented here was to provide managerially useful information on the distribution of user demands and the availability of materials. The goal should be to obtain the largest number of usable responses with the least amount of staff time. For this reason, the number of questions on the survey form has been limited so the questionnaire does not occupy more than one sheet. Questions are simply worded and use as little library terminology as possible. A large amount of white space has been left on the questionnaire to make it appealing to the eye and easy to read. In general, the length and number of questions were designed to minimize respondents' time and increase the likelihood that the forms would be returned.[11] To enhance the return rate further, the questionnaire was designed to be administered in an initial interview with the user. The interview enables the researcher to explain the study, solicit the consent of the user, and record the exact nature of the user's request before the user approaches the library's collection. The user then need only report the results of the search upon leaving the library.[12] The return rate of questionnaires in the pretest of this method (see Appendix A) was over 95%. The approach of this method is to minimize costs by

enhancing user cooperation and at the same time reducing the direct costs of administering the test. The survey was designed to meet the following criteria:

1. *Cost*. The survey should require a minimum of materials to administer the test. It should require a minimum of staff time and should be simple enough to be administered by a library clerk or trained volunteer. It should demand a minimum of time of the researcher to code, score and compile test results. It should require no elaborate training program to teach the researcher and assistants the methods used to administer the test.
2. *Equipment*. The test should require no sophisticated computational and scoring equipment. It should be producible with standard office supplies or with equipment readily available at reasonable cost. Libraries with access to computers and programmers to score and compile test results should obviously design different instruments to take advantage of the economies such equipment offers.
3. *Patron time* The test should minimize patron time to complete the questionnaire. This is a serious matter since much survey research treats time of the subjects as free. An effort to make the test instrument as simple and easy to complete will reduce the resistance of patrons to participate and enhance the return rate of questionnaires.

These considerations require that the test be simple, cheap and to the point. The researcher may be tempted to ask a larger number of questions or to provide a wide latitude for possible responses, but should be aware that the price of increased length is a lower response rate and less cooperation. This survey asks the questions necessary to get estimates of ownership and availability, and leaves room for a few additional items the researcher or library may wish to include. If some weaknesses are detected in a portion of the collection, additional information about that specific problem may be desired later. If so, appropriate instruments and measures may then be designed to diagnose the problem specifically. This survey should be thought of as a preliminary indicator of the ability of the library to supply materials demanded by users.[13] If the scores are satisfactory to the library administration, then a minimum of time and energy will have been expended to discover this. If, on the other hand, scores are lower than desired, further testing may be undertaken, if needed, and remedies for the problem designed. (Some suggestions of possible lines of more detailed inquiry are offered in the section discussing limitations.)

This survey requires the following commitments of staff and materials:

1. It is designed to be administered to users as they enter the library. A staff person would be placed at each entrance of the library for the time

the test is being administered. By using an initial brief interview, the administrator of the test can verbally direct the user through the first questions, especially the distinction between item and class requests, so the written questions can be brief and to the point. The person who administers the test should be conversant with the questions asked and their meaning, and able to encourage users to complete the form correctly and completely. The person should also be familiar with the test objectives so that he/she may answer questions users may have about the purpose of the survey.

2. The test is designed to be coded and scored by a researcher or the clerk who administers the test in a few minutes. Responses are coded onto the forms themselves, counted, and correct values entered on the scoring worksheet. The final tabulation of results should take no more than an evening or two of the researcher's time.
3. The test requires printing, or duplicating equipment capable of printing on two sides of a sheet. This is not beyond most print or copy shops.
4. A three-hole punch with movable punches is needed to punch holes for the keysort scoring method used.
5. A small electronic calculator is desirable. Most libraries have some kind of calculator.
6. A method of selecting testing times at random is needed. A method using a random number table (available in most statistics books) and a simpler method using a die and a coin are suggested below.

The Test

The sample questionnaire included here consists of six questions to be answered by each user in the sample of users. The questions are simply worded and treat the availability problem in its barest essentials. Item requests are handled on the front of the sheet. The user is asked to report the name of the item as well as possible upon entry into the library, and report upon leaving the library whether the library owns the book (or other item) and whether it was available for use. Class or type-of-material requests are entered on the back side of the sheet. The form suggested here allows certain types of requests to be checked off, but users with requests for subjects or authors are asked to write in the type of request as specifically as possible. The user is then asked to report ownership and availability of the class of materials and return the questionnaire upon leaving the library. The definition of ownership and availability must be vaguer for requests for types of materials than for items, because the question becomes whether the library has enough materials of the type demanded to satisfy the

demand. Only the users can judge this, and they should be encouraged to report failure if not enough material is found.

It is important to separate those seeking a known individual item from those seeking an item from a group of items, because the chances of finding a specific item will be lower than the chances of finding at least one of a number of similar items. For example, if the item availability rate is 0.70, then the chance of finding an individual item is 70%. If a patron is looking for, e.g., at least one of five similar items, the same item availability rate produces an availability rate for at least one of five items of 0.998. This is 1-(probability that all five are missing) = 1-$(0.30)^5$ = 0.998. In other words, the chance of finding at least one of five items if the availability rate for each item is 0.70 is nearly certain.[14] For this reason, class requests must be kept separate to avoid overestimating the actual availability rate.

The distinction between item and class requests will also tell the librarian how the library's resources are usually used, i.e., whether patrons are more likely to be looking for a specific item or one of some group of items. A librarian may care to know, for example, whether service can be improved through acquisition of duplicate copies of titles in demand or by adding additional titles in areas of high demand. It has been found in academic libraries that more requests are for items than for subjects and that the proportion of users seeking individual titles increases with the academic status of the user. Tagliocozzo and Kochen reported in a catalog use study at Michigan that 71.7% of searches in the general library were for known items, 68% in the undergraduate library, and 49.5% in the Ann Arbor Public Library.[15] A 1964 Birmingham University Library study reported that 65% of graduate user searches were for known publications, versus 32% for undergraduate users.[16] Lipetz estimated that 56% of the demand by users of the Yale University library was for known items versus 33% for subjects.[17] The usage of public libraries is not so clear, however. While a survey of the research libraries of the New York Public Library showed the breakdown between item and subject requests to be roughly the same as at Yale, when smaller, less scholarly collections are surveyed, the proportion may change radically.[18] A survey of public libraries in Summit County, Ohio, found that only 29% of users came to the library for specific titles while 39% came for browsing purposes.[19] In Grand Rapids, Michigan, an even smaller number of item requests—20%—was reported.[20] The proportion of item and class requests will tell the librarian what kinds of steps may be helpful to increase availability.

Knowledge of the proportion of item and class requests may also influence the choice of appropriate instruments for measurement of availability rates

themselves. It can be argued that measurements designed to estimate availability of individual items will underestimate the true availability of the library's collection if users are not usually looking for known items in the library but rather are looking for materials by subject or type.

The second question on each side of the questionnaire asks if the library owns the item or material the patron wants. This may be more complicated than it seems, since an accurate response requires some knowledge on the part of the patron of how to determine what the library holds. Many users may be unfamiliar with catalog organization and use, or may not be aware that periodicals and serials may be listed elsewhere in the library. For this reason, some examples of how information about ownership might be discovered are worded into the question. (The explanation uses the term *magazine* in favor of the more accurate *periodical* or *serial*, because the latter two may not be familiar to the user.) Additional difficulties may be answered in the interview.

In all questions, a person who has found what he/she wanted need only mark "yes." On the other hand, persons who find the library's resources lacking are offered an additional service if they desire it. The library offers to acquire or borrow the material requested. Most public libraries have procedures allowing users to request purchase or interlibrary loan of materials not owned by the library. The form suggested here offers users this service explicitly to those who did not find materials. In the library in which the pilot survey of this method was conducted (see Appendix A), the library's policy is to offer purchase consideration forms or interlibrary loan request forms to all users who cannot find items sought. To find out if the user was offered this option, all that was needed was to ask the user if he/she asked a staff member for assistance. Asking if assistance was requested also reduces the number of failures that need to be searched by the researcher (if such searching is desired at all), because library staff policy is to search for the item with the user, so it can reasonably be assumed that neither the librarian nor the user could find the material.

The third question on each side asks if the item or material was on the shelf when the patron looked for it. This follows a logical sequence, since it is impossible for a user to find something the library does not own. (For the purposes of this test, materials technically not owned by the library, such as materials the library has borrowed from a regional library center or some other network, should be considered "owned" if they are held by the library and available for use.) Thus, it is impossible to answer "no" to questions 2 or 5 and "yes" to questions 3 or 6, respectively. However logical this order of questioning may be, it may be the reverse order in which many users

ascertain whether the library owns material. Particularly for fiction, a user may proceed first to the shelf for material and may only later, or never, look in the catalog to find out if the item or material is actually owned. This is only logical from the user's point of view, since if material is not available for use it really does not matter whether it is owned or not.[21]

The user should supply only the information he/she knows, so it may be that an answer will appear to questions 3 or 6 without a corresponding response to the previous question. The researcher should anticipate this possibility and instruct the test administrator.

The estimates to be derived from the test are as follows:

1. *Item holdings rate. This is the number of "yes" responses to question 2* divided by the number of "yes" responses to question 1.
2. *Item shelf rate.* This is the number of "yes" responses to question 3 divided by the number of "yes" responses to question 2.
3. *Item availability rate.* This is the number "yes" responses to question 3 divided by the number of "yes" responses to question 1. (Note that IAR = IHR × ISR.)
4. *Class holdings rate.* This is the number of "yes" responses to question 5 divided by the number of "yes" responses to question 4.
5. *Class shelf rate.* This is the number of "yes" responses to question 6 divided by the number of "yes" responses to question 5.
6. *Class availability rate.* This is the number of "yes" responses to question 6 divided by the number of "yes" responses to question 4. (Note also that CAR = CHR × CSR.)

The questionnaire readily generates the following additional information which should be of interest to the librarian:

1. Percentage of patrons who look for known items. This is the number of "yes" responses to question 1 divided by the total number of questionnaires.
2. Percentage of patrons looking for subject areas or other classes of items. This is the number of "yes" responses to question 4 divided by the total number of questionnaires.
3. The remaining percentage corresponds to patrons in the library for some other reason.
4. The distribution of requests by subject or type for item or class requests, based on responses to questions 1 and 4.

Test Administration

The librarian or researcher should select a convenient and reasonable method of administering the questionnaire; there are many possible methods. An effort should be made to get the largest number of responses possible with the fewest staff hours. However, a method should be devised so that groups of people are not inadvertently excluded. A librarian might be tempted to test at peak usage times of day, or certain weeks of the year when usage is known to be high. This might satisfy the goal of a maximum number of responses, but might not represent users as a whole. Certain times of the day might have men, or women, or certain occupational groups represented in smaller proportions than among users as a whole.

Some method of selecting times of administration should be used that does not intentionally or inadvertently give an unrepresentative sample. The goal should be that any user has the same chance of being interviewed as any other user. For example, the librarian should select some weeks at random from the year, then decide to interview, say, every third or fourth patron during those weeks. Or, the librarian could select at random several days per month and survey all or part of the patrons on those days. A disadvantage of such a procedure is that one staff person per entrance would be occupied for entire days or weeks and kept from his/her regular duties. The load on the staff would be especially heavy if all users were to be interviewed in any given period of time.

Drott suggests the following procedure for selecting interviewing times.[22] First decide how long the survey should take and count the number of days, hours and minutes in the period. If the library is open Monday—Friday 9-9 and Saturday 9-6, and the survey is to last two weeks, then the problem is to convert random numbers to 12 days, 12 hours, and 60 minutes. Drott suggests the following rule for converting the first two random digits in the table to days:

If random digits are:	Convert them to:
00 to 07	1
08 to 15	2
. . .	. . .
88 to 95	12
96 to 99	Skip

The same rule may then be used to convert to time of day by letting 9-10 A.M. = 1, 10-11 A.M. = 2, etc. Within each hour, the exact time for interviewing could then be determined by letting on-the-hour = 1, five-minutes-after = 2, etc. Thus the sample times selected could be:

Random Number		*Day*	*Hour*	*Minute*
0301	1594	1	9 A.M.	30
8460	8881	11	4 P.M.	60 (5 P.M.)
9632	0065	Skip		
6694	4640	9	8 P.M.	30

If the day and hour selected in this way does not apply to a particular day of the week, e.g., 8 P.M. Saturday, then skip to the next time. Drott suggests interviewing the first person who enters the library after the specified time. This will yield a sample derived in such a way that a user entering the library at any time during the survey period would have the same chance of being interviewed as users entering at any other time.

If the library has use patterns that vary widely from hour to hour, the researcher may wish to compensate for this by interviewing more than one user at each sampling point. The procedure suggested by Drott will yield one interview per sampling time, so the number of sample points must equal the desired sample size. If more than one user is interviewed at each sample time, then the number of users will depend on the number of sample times and the volume of user traffic at each of those times. The researcher could select day and hour in the manner described above, but choose to interview, say, every third or fourth user for a 15- or 30-minute interval within that hour. In this case, random numbers have to be converted to numbers from one to four for 15-minute intervals, or to one and two for half-hour intervals. Thus, 00-24 would become on the hour; 25-49, 15 minutes after the hour,...75-99, 45 minutes after the hour; or, for half-hour intervals, 00-49 becomes on the hour, and 50-99 on the half hour. If this procedure is used, some study of the hourly traffic in the library will be necessary to determine the interval at which to interview users within the selected time. The interview process can take up to five minutes, so the interval should not be so frequent that every fourth or fifth user could not be interviewed. The number of users interviewed in each interval will depend on the number of users who enter at that time, not a fixed number per interval, so some light-traffic times may yield only one interview in a half-hour period, while heavy-traffic times might result in six interviews.

For some reason the librarian may believe that it is important to sample some users from every day of the week. If the daily user count in the library is roughly the same, the departure from the previous method will be small, and a simplified procedure may be used. Hours and minutes can be selected using random numbers in the same way as above, with the number of intervals proportional to the number of hours the library is open each day.

An alternate method that may be easier is to divide the number of hours the library is open into six equal parts, then roll a die to select the time interval, e.g., 9-11 A.M. = 1, and so on. Within each interval, the exact time could then be chosen by successively tossing a coin until the range of options is narrowed to the desired interval, by letting heads be the first half of the interval and tails the second. Thus, a roll of 1 means 9-11 A.M.; heads means 9-10; and then tails, 9:30-10. As above, if intervals of time are to be used for interviewing, the researcher should choose how many patrons to interview by selecting some number such that it will be possible to handle the patron traffic at peak usage times.

Once the period of the administration of the test is selected, the researcher should then decide which of the first *n* users (the number selected to skip) to interview. A random number table or a die can be used to tell how many users to skip before the first one is interviewed. Then each "*n*th" user after that should be interviewed. (A procedure similar to this is described in detail in the appendix.)

The procedure should be, then, to select the number of weeks or days in which to administer the sample, and, given the estimated number of patrons expected to enter the library, choose a number to be interviewed and devise a random method to achieve that number. The questionnaire should then be administered for the entire period selected by the researcher. How long should the period be? Two to four weeks is often used, perhaps more than once per year to account for seasonal variations in demand for materials. What number of interviews is sufficient? There is no rigid rule, but a higher degree of confidence and of accuracy in estimates of availability will be associated with larger sample sizes. If the librarian is satisfied with the knowledge that, nine out of ten times, this kind of survey will give an estimate of availability within five percentage points of the original estimate, then a sample size of 271 users would be large enough.[23] How many responses to solicit is as much a fiscal consideration as anything. If 20 responses could be collected each hour, 200 would take 10 hours, 500 would take 25 hours, and so on. At $3.75 per hour for a clerk to administer the test and 20 responses per hour, responses would cost about $0.20 each in clerical time alone. The researcher needs to decide how much additional confidence is worth. The advantages of choosing, e.g., 400 sample times and interviewing one user each time, would be that a minimum amount of time would be wasted by the clerk waiting for patrons to enter the library, and interviewing users would not completely disrupt the interviewer's other tasks. At 3 minutes per interview, 400 responses would take 20 hours and cost $75. (As survey research goes, this is a small sum, but the librarian should be aware that additional responses are not free.) In any case, the

researcher should decide in advance how many responses are to be collected, and calculate a sampling interval to yield the desired number. If the librarian wants a good estimate of availability of a particular type of material (say, the availability of adult fiction), then the researcher should be aware that the confidence interval associated with the availability estimate of that type of material is related to the number of responses users supply related to that type, not to the total number of responses. In the example, if 30% of users are expected to be fiction readers, to achieve a ±5% estimate (for 9 out of 10 such surveys) for the availability of fiction, then 271 fiction users' responses are needed, or a total of 904 responses. The researcher may decide to get a reasonably good estimate of overall availability and accept a lower degree of confidence for estimates of availability of particular kinds of material. Additional studies targeted at certain kinds of users may then be designed if necessary.

Coding and Scoring

The method suggested for coding the responses is a simple keysort method. Holes are punched in the questionnaires corresponding to the number of questions asked, and then are torn open at the hole nearest each "yes" response so that "yes" responses to that question will drop from the stack of sheets when a nail or icepick is inserted in the proper hole. To code the sheet, tear open the hole selected to represent the "yes" response. To count the number of responses, insert a nail or icepick into the hole, and allow the "yes" responses to drop. Count the "yes" responses and enter the number on the scoring sheet. (A sample questionnaire, and another one marked with suggested coding scheme, along with a scoring sheet are included in this packet. A more complicated approach is described in the appendix.) One corner of each questionnaire has been removed so that the bundle may be shaken freely and sheets allowed to drop by themselves. They are reordered for the next sort merely by lining up the corners of the sheets. Note also that if the third question on each side (the shelf question) is marked "yes," then the second question should also be coded "yes," even if the user did not respond. (As explained earlier, this is because it is impossible to find material on the shelf that is not owned by the library.)

Once the mechanism of sorting the questionnaires is mastered, it should be a straightforward procedure to complete the scoring worksheet included here. This sheet is meant to represent one sampling interval. Separate sheets may be kept for each interval and may be cumulated at the end of the test. The researcher may wish to test for variations in availability from day to day or from time-of-day differences, and these scoring sheets will be needed. If this analysis is not desired, then the entire stack of returned and

coded questionnaires may be sorted and scored at once, which should save time. The researcher may want to punch holes and clip corners in the forms after they are returned. The punching may take longer if done in this way, but the user will be presented with a more conventional-looking form to complete and will not be confused by an array of punches in the sheet.

Test Limitations

This is a test of limited scope meant to provide data on item and class availability of materials. It sacrifices completeness in order to be as cheap as possible to administer and score and to be as easy as possible for a user to fill out. It cannot cover all the possibilities that might arise, and will not answer every question the researcher may wish to ask.

There will be problems of administration of the questionnaire. Many users come in with a list of items or a list of subject areas that they wish to search for. How do they fill out the questionnaire that forces a choice between single-item searches and class-of-item searches? Though there is no correct solution, the user could be asked to choose the item or class the researcher should consider.

There may also be a problem with the definition of "class." Materials could be classed as "materials I like" and "materials I don't like," but if these are the classes reported, the informational value to the researcher is limited to the user's satisfaction, for there is no clue to the actual demand. Users should be encouraged to fill out the second side of the sheet only if they can reasonably define what type of materials they want. This may exclude some vague demands but will reduce the number of unintelligible responses. In the pretest, users who could specify even fiction rather than nonfiction as the target area of their search were recorded as "class" requests. Users who could not even be this specific were recorded as "general browsers."

More serious limitations of this test are related to the design of the questionnaire. The survey provides only limited ability to diagnose the reason a user was not able to find what he/she was looking for, indicating only whether or not there was success. If a response states that material is not owned by the library, this could be because the library in fact does not own it, or the catalog is misfiled, or because the patron simply failed to find the entry. These failures have been called "library failure" and "user failure," respectively.[24] This test does not distinguish the two types of failure. Likewise, the patron may not find an item on the shelf because it is checked out, stolen or in use; because it is misshelved; or because the user could not find it even though it is there.

These possibilities can be examined within the context of this survey, but it will complicate the procedure of administration. One method to estimate the proportion of mistakes due to patron error is to ask a competent staff person to check the item or class indicated by the patron immediately after the questionnaire is turned in.[25] This procedure assumes that a trained person is considerably less likely to make a mistake than the average user. The researcher could have all or part (chosen at random) of the questionnaire searched and verified to reach an estimate of patron error. This estimate would give a clearer idea whether the availability estimate reflects library failure or user error. If user error is a significant factor, funds might be used for clearer signs in the library or for user education programs. If low availability is due to library failure, an effort could be made to find the source of the problem—poor catalog organization, misshelving, too few copies of materials, or simply inadequate coverage.

However, checking and verifying users' responses to questions is clearly a time-consuming job and will multiply the minimum cost of the survey several times because of additional staff hours necessary. Especially in the case of shelf failures, immediate verification in necessary, for if even several hours are allowed to lapse between the time the user searches and the time the staff member checks the search, the material might be reshelved or checked out. Because this workload is considerable, it should be done only if necessary. It would probably be worth the effort to estimate patron error only if the availability estimate is low in the first few days of the survey. If availability is high, then user error must necessarily be small. A researcher may decide not to try to estimate user error in any case because of the expense. It is important to note here only that error estimation is possible if preliminary results warrant the additional staff commitment.

Two other limitations of this design are apparent. First, the questionnaire does not consider users with specific reference questions. This is an intentional omission because many libraries handle phone requests that would not be captured at all by this type of survey. It would be a relatively simple matter to ask reference personnel to keep a log of reference questions for the duration of the survey, and would obtain results more economically than using the questionnaire to do so. The second limitation is that the survey does not provide direct results on the availability of other facilities or services the library might offer apart from materials. Public libraries especially are more than document delivery centers, so only part of the use of the facility is captured in this survey. The interviewer should at least record the actual library use the user reports, even if the answer is "no" to questions 1 and 4, so that an accurate description of facility use may be reached.

Interpretation of Results

What do the results of the completed survey mean? This is, of course, related to the test objectives outlined. If the researcher decides that materials availability is too low, there are a number of methods to remedy the problem. The number of copies of materials of low availability can be increased, or the loan period for them may be shortened, or in the case of low holdings estimates, additional volumes might be acquired.[26] For classes of materials, broader coverage or multiple copies would also increase availability. Thus, a predetermined level of availability can be achieved for any materials in the library by selecting an appropriate combination of policies.

There is no easy way to determine an acceptable level of availability; an example may illustrate the problem. Assume that 90% of the materials demanded by users are owned by the library, and that of those owned, 90% are on the shelf. Assume further that eight of ten patrons are skilled enough to find the materials. These are generous assumptions. The availability estimate will then by $0.9 \times 0.9 \times 0.8 = 0.65$. Thus, a user has only a 65% chance of finding what he wants, even under favorable assumptions. Merely reducing the estimate of ownership or the estimate of the percentage of the collection on the shelf to 70% will reduce the chances of finding material to 50%.

Other studies of catalog use and document delivery have yielded results in the 60-90% range for holdings and the 40-60% range for availability estimates. Tagliacozzo and Kochen found the success rate in catalog use for known item searches to range from an 81% high in the general library at the University of Michigan (with 13.7% of users failing to find entries for items that were owned by the library), to 60.5% for Ann Arbor Public Library (where 7.2% of searches failed to find existing entries). These translate into holdings rates of 94.7% for the University of Michigan and 67.7% for Ann Arbor Public Library.[27] For subject searches, they reported 4.2% "zero-match" searches (i.e., the library held nothing on the subject) and 15.7% "unsuccessful" searches (i.e., the user did not like any of the works found on the subject) for the general library, and 14.4% zero-match and 14.4% unsuccessful searches for Ann Arbor Public Library. This implies a class holdings rate (for subjects) of 80.9% for the general library, and 71.2% for Ann Arbor Public Library.[28] Gore reported an item holdings rate of 0.90 at Macalester College, as did Lipetz at Yale.[29]

Shelf availability rates of items held have been reported at 45% by Line at Bath University; 32%, 39.3% and 32% at three British universities by

Urquhart and Schofield; 53.8% by Smith and Grenade at the University of Tennessee; and 48.5% in an evaluation of an ongoing document delivery service by Goehlert.[30] Overall availability rates of materials (holdings rates times shelf availability) have been reported at 41% by Goehlert, 43-51% by Mavor and Vaughan at Hamline University, and 65% by Kantor at Case Western Reserve University.[31] After a deliberate attempt to raise availability of materials at Macalester College (by buying duplicate copies of high-demand materials and by reducing unregistered borrowing), Gore was able to report an increase in availability from 58% to 70%, and later measured availability at 79% using different methods.[32] Kantor has summarized a number of studies of availability and concluded that a researcher could expect that holdings rate, shelf rate, library error and user error together combine to produce an expected availability rate of 57% for items in a circulating collection, or 66% in a noncirculating collection.[33]

Considerably less research has been done on availability of classes or groups of items, but some results hint at what might be expected. The Summit County, Ohio, survey asked users if they were satisfied with what the library had to offer. Of those responding, 76% reported complete satisfaction, 20% reported partial satisfaction and 4% complete dissatisfaction. Of those expressing other than complete satisfaction, 27% reported that material was owned but not available, 16% that material was not owned, and 20% that the library did not have enough materials of the type requested.[34] At Grand Rapids, Michigan, corresponding satisfaction levels were 32% partially satisfied and 7% not satisfied.[35] For the New Haven (Conn.) Free Public Library, Schlessinger reported 47.4% satisfied, 31.7% partly satisfied, and 20.9% dissatisfied in response to a more general question on satisfaction with the information resources of the library.[36] Because of the nature of these questions, it is not possible to extract a firm estimate of class availability, but the examples give some context within which to evaluate results of this survey.

What has been presented here is a straightforward method to estimate types of library use and availability of materials according to use. This kind of research has been used in the past to give libraries a clue to the source and magnitude of problems relating to failures of users to find materials they seek. What use may be made of them? Buckland has used these measures to adjust loan policies and make high-demand materials more likely to be on the shelf. Gore has used these measures to determine that a concerted effort was needed to supply duplicate copies of high-demand books. The objective of all researchers has been to isolate problems which arise from the lack of shelf availability of items already owned by the library from problems that arise from the library's not owning materials demanded. Given the

estimate achieved here (and an estimate of patron error, if one is made), the library may decide if some problem exists in ownership or shelf availability. If a problem is diagnosed, the librarian may then decide to do further research into the causes of failure, or may attempt to improve the performance of the library by some changes in policies or procedures. This survey is not an end; it is merely a means to determine how well the institution serves its public so that better service may be provided. This survey is designed to make an informed estimate of the performance of document delivery within the reach of any library.

MATERIALS AVAILABILITY SURVEY

(Sample Questionnaire)

1. Did you come to the library for some particular item?

___Yes. Please fill out this side.

___No. Please turn this sheet over and go to question 4.

Please write down the name of the item.

_____

2. Does the library own the item you came in for today? (For example, is it listed in the catalog, or in the magazine list?)

___Yes.

___No. If you would like the library to try to get it, please ask at the reference desk.

3. Was the item you came in for today on the shelf?

___Yes.

___No. If you would like the library to hold the item for you and call you when it is available, please ask at the reference desk.

Thank you for your cooperation.

4. Did you come into the library looking for a certain kind of material?

___Yes. Please describe what you want. ___No. Thank you for your cooperation.

Works by_____ ___Fiction ___Film
(author)

___Non-fiction ___Record

Works about_____ ___Periodical ___Other
(subject)

5. Does the library own the kind of material you came in for today?

___Yes. ___No. If you would like the library to try to get this kind of material, please ask at the reference desk.

6. Was the material on the shelf?

___Yes. ___No. If you would like the library to hold this material and call you when it is available please ask at the reference desk.

Thank you for your cooperation.

SCORING INSTRUCTIONS

1. If questionnaires were not punched before distribution, punch holes in the forms as in the attached example, and clip the corner from the upper right of the front of the sheet.

2. Code responses by tearing open the hole closest to the "yes" response for each question. A suggested coding scheme is indicated on the sample questionnaire included here. The three holes along the left side of the questions (front and back) are reserved for the availability questions. The remaining holes may be used to code information on type of materials, type of user, or any other information that is to be scored. Note that the holes reserved for "yes" responses to questions 1 and 4 may not be used to encode additional information, for they provide the key to separating responses into "item," "class," and "other" groups. (These holes are marked with an "x" on the opposite side of the sheet to indicate that they should not be torn open for questions on that side.) The sheets enclosed suggest a method to code "item" requests, "class" requests, and "other" requests.

3. Once responses are coded, scoring may proceed. Assemble the sheets so that the clipped corners line up, insert a needle or icepick into the hole corresponding to "yes" to question 1, and let the forms drop. The pack may be shaken to be sure all the "yes" responses have dropped. Assemble the forms that have dropped with the clipped corners aligning, and set them aside. Do the same for "yes" responses to question 4. There should now be three stacks of questionnaires.

4. Take up the stack coded "yes" to question 1. Count the number of questionnaires, and enter this number on the line marked "item searches" on the scoring sheet.

5. Insert the needle into the hole corresponding to "yes" to question 2, let the "yes" responses drop, count them, and enter the number on the line marked "items owned." If any users have responded to question 3, saying that the item was found, but did not report that the item was owned, be sure to count this response as an owned item. In other words, all sheets coded "yes" to question 3 should also be coded "yes" to question 2. If any have not been so coded, code them now and recount the number.

6. Insert the needle into the hole corresponding to "yes" to question 3, and allow the forms to drop. Count the number of questionnaires that drop, and enter the number on the line marked "items on shelf" on the scoring sheet.

7. Take up the stack coded "yes" to question 4. Count the total number so coded and enter the number on the line marked "class searches" on the scoring sheet.

8. Insert the needle into the hole corresponding to "yes" responses to question 5, allow the forms so coded to drop from the pack, count them, and enter the number on the line marked "class owned" on the scoring sheet. (As in instruction 5 above, all "yes" responses to question 6 should also be coded as "yes" responses to question 5, because a user cannot find what is not owned, so if some have not been coded for question 5, code them now, and recount the number.)

9. Insert the needle into the hole corresponding to "yes" to question 6, allow the questionnaires to drop from the pack, count them, and enter the number on the line marked "class on shelf."

10. Take up the stack coded "no" to questions 1 and 4. These represent users not looking for materials. Count the number of these responses, and enter this number on the line marked "other uses—total." If the test administrator wrote down on the form what the "other" purpose for each user was (as in the pretest outlined in the appendix) then these "other" uses may be coded and counted as suggested here. These options represent a possible set of responses, and each library should expect different responses, depending upon the facilities it offers. Enter the numbers on the scoring sheet for "other uses."

11. The numbers entered on the lines marked "item searches," "class searches," and "other uses—total" should equal the number of questionnaires collected in this testing session. Add these numbers and enter the total in the line marked "N = ." You may wish to double-check by counting the number of questionnaires in all three stacks, which should equal the number "N."

12. You are now ready to calculate availability values. Divide the number of "item searches" by the total number of questionnaires "N" and enter this value, expressed as a percentage in the line marked "item requests (%age)."

$$\text{Item requests \%} = \frac{\text{Item searches} \times 100}{\text{N}}$$

13. Divide the number of "class searches" by the total number of questionnaires "N" and enter this value, expressed as a percentage, in the line marked "class requests (%age)."

$$\text{Class requests \%} = \frac{\text{Class searches} \times 100}{\text{N}}$$

14. If you wish to express percentages of item and class searches as a percentage of *materials requests*, instead of total requests, then substitute (Item searches + Class searches) for N in the above instructions.

15. Calculate item holdings rate. This is the number of "items owned" divided by the number of "item searches." Enter this value (in the form 0.00) in the line marked "Item holdings rate."

$$\text{Item holdings rate} = \frac{\text{Items owned}}{\text{Item searches}}$$

16. Divide the number of "items on shelf" by the number of "items owned," and enter this value on the line marked "item shelf rate."

$$\text{Item shelf rate} = \frac{\text{Items on shelf}}{\text{Items owned}}$$

17. Divide the number of "items on shelf" by the number of "item searches," and enter this value on the line marked "item availability rate."

$$\text{Item availability rate} = \frac{\text{Items on shelf}}{\text{Item searches}}$$

18. Note: Item availability rate = Item holdings rate × Item shelf rate.

19. Divide the number of "class owned" by the number of "class searches" and enter the value on the line marked "class holdings rate."

$$\text{Class holdings rate} = \frac{\text{Class owned}}{\text{Class searches}}$$

20. Divide the number of "class on shelf" by the number of "class owned," and enter this value on the line marked "class shelf rate."

$$\text{Class shelf rate} = \frac{\text{Class on shelf}}{\text{Class owned}}$$

21. Divide the number of "class on shelf" by the number of "class searches," and enter the value on the line marked "class availability rate."

$$\text{Class availability rate} = \frac{\text{Class on shelf}}{\text{Class searches}}$$

22. Note: Class availability rate = Class holdings rate × Class shelf rate.

23. Count the number of different types of materials requests for items and class requests (author, subject, etc.) and enter the numbers in the lines provided. Availability figures may be calculated for each type of material in the same manner as for the total figures, simply by starting with the smaller number of questionnaires that corresponds to the type of material or type of user of interest.

24. A scoring sheet should be kept for each test administration period. To calculate the overall availability rates for the entire testing period, sum the values for "item searches," "items owned," "items on shelf," "class searches," "class owned," and "class on shelf," onto a separate scoring sheet, and calculate overall availability from this cumulative sheet in the same way the holdings, shelf, and availability rates were calculated on each separate scoring sheet. In other words, find the total *numbers* for each of the categories of searches, owned, and on shelf, and calculate total availability figures from these numbers. Do *not* simply average the values calculated on each separate sheet for holdings, shelf, and availability rates, for the number of questionnaires in each test administration period may vary widely, and so total availability rates are not merely the average of those on the separate scoring sheets.

25. In a similar manner, the total number of requests for "other" services, and the total breakdown by type of material may be calculated by summing the values on each of the individual scoring sheets onto a cumulative sheet, from which total percentage distributions may be calculated.

26. Additional examination of type of request, subject breakdown, and availability of subclasses of materials is possible, if the interviewer was careful to record the exact nature of each request. (Examples of additional analysis are included in the appendix.)

27. If the researcher decides that no analysis by time of day or day of week is desired, then some time may be saved by scoring all the questionnaires together following instructions 1-23. In this case, no cumulative scoring sheets will be needed, for the entire body of questionnaires will be scored at once.

(Author) (Subject) (Fiction)

Yes-1 Coding (coding for users requesting materials) (Non-fiction)

MATERIALS AVAILABILITY SURVEY

(Sample Questionnaire)

1. Did you come to the library for some particular item?

___Yes. Please fill out this side.

___No. Please turn this sheet over and go to question 4.

Please write down the name of the item.

_____

2. Does the library own the item you came in for today? (For example, is it listed in the catalog, or in the magazine list?)

Yes-2

___Yes.

___No. If you would like the library to try to get it, please ask at the reference desk. (Periodical)

3. Was the item you came in for today on the shelf?

___Yes.

___No. If you would like the library to hold the item for you and call you when it is available, please ask at the reference desk.

Yes-3

Thank you for your cooperation.

(Other)

(Film) (Record) X

(Author) (Subject) (Fiction)

4. Did you come into the library looking for a certain kind of material?

____Yes. Please describe what you want. ____No. Thank you for your cooperation.

Yes-4)

Works by_____ (author) ____Fiction ____Film

____Non-fiction ____Record

Works about_____ (subject) ____Periodical ____Other

(Non-fiction)

5. Does the library own the kind of material you came in for today?

____Yes.

____No. If you would like the library to try to get this kind of material, please ask at the reference desk.

Yes-5

(Periodical)

6. Was the material on the shelf?

____Yes.

____No. If you would like the library to hold this material and call you when it is available please ask at the reference desk.

Yes-6

Thank you for your cooperation.

(Other)

(Film) (Record)

29

"Other" library users will respond:

(coding for other users)

MATERIALS AVAILABILITY SURVEY

(Sample Questionnaire)

1. Did you come to the library for some particular item?

___Yes. Please fill out this side.

X No. Please turn this sheet over and go to question 4.

Please write down the name of the item.

_____

2. Does the library own the item you came in for today? (For example, is it listed in the catalog, or in the magazine list?)

___Yes.

___No. If you would like the library to try to get it, please ask at the reference desk.

3. Was the item you came in for today on the shelf?

___Yes.

___No. If you would like the library to hold the item for you and call you when it is available, please ask at the reference desk.

Thank you for your cooperation.

(other use) (other use)

4. Did you come into the library looking for a certain kind of material?

___Yes. Please describe what you want. X No. Thank you for your cooperation.

Walk down other use here

Code: (return Item)

Works by_____ ___Fiction ___Film

(author) ___Non-fiction ___Record

Works about_____ ___Periodical ___Other

(subject)

5. Does the library own the kind of material you came in for today?

(Attend meeting) ___Yes.

___No. If you would like the library to try to get this kind of material, please ask at the reference desk.

(Place to study)

6. Was the material on the shelf?

___Yes.

___No. If you would like the library to hold this material and call you when it is available please ask at the reference desk.

(Pick up reserve item)

Thank you for your cooperation.

(Reference publication)

(use Copier) (Browsing)

SCORING SHEET

Day _____ Date _____ Time _____

N = _____

Type of material:

	Item Search	*Class Search*
Author	_____	_____
Subject	_____	_____
Fiction	_____	_____
Nonfiction	_____	_____
Periodical	_____	_____
Film	_____	_____
Record	_____	_____
Other	_____	_____

Other uses:

Total	_____
Return items	_____
Place to study	_____
Reference question	_____
Browsing	_____
Use copier	_____
Pick up reserve	_____
Meeting	_____
Other	_____

Item searches	_____
Items owned	_____
Items on shelf	_____
Class searches	_____
Class owned	_____
Class on shelf	_____
Item requests (%age)	_____
Item holdings rate	_____
Item shelf rate	_____
Item availability rate	_____
Class requests (%age)	_____
Class holdings rate	_____
Class shelf rate	_____
Class availability rate	_____

APPENDIX

Materials Availability Survey of the Champaign Public Library

A pretest or pilot study using the method outlined in this paper was conducted at the Champaign Public Library and Information Center, Champaign, Illinois, for four weeks in March 1979.* The principal aim of the study was to evaluate the test instrument and user response to it in a public library under normal operating conditions. Interviews were conducted with users as they entered the library, where the initial screening between item, class, and other requests was made. If the user reported some purpose for visiting the library other than looking for library materials, their exact purpose was recorded and no further questions were asked. Included as "other" responses were users who said they were generally browsing the collection, but who would not even specify whether they were looking for fiction or nonfiction. Users who could specify their materials request with any degree of specificity were then asked to complete the questionnaire appended to this report.

The interviews were all conducted by the researcher in the same general way. The user was asked first if there was some item he/she wanted from the library. If the answer was "yes," the user was directed to the front of the questionnaire and asked to complete the first three questions. The user was then asked to take the sheet along and mark availability of the item sought when he/she left the library. If the user responded that he/she was not looking for some item, then it was determined if there was some subject or type of material desired. Users were encouraged to be as specific about their request as possible, and some prodding by the interviewer helped narrow down the request in many cases. Users were asked if there were some author, subject, part of the collection, or form of material that they wanted. They were then asked to write down what type of material was desired, complete the first three questions on the second side of the questionnaire, and report on availability as they left the library. In some cases there was a question about whether a request should be for an item or type of material, as in the case of periodicals. If the user could specify any title of any type of material that they expected to see, then they were counted as looking for that title. Periodicals were counted as items if one title was sought, even though several issues might be desired. If several titles were involved, e.g., "I am looking for news magazines like *Time*, *Newsweek* or *U.S. News*," the request was counted as a class request.

The researcher suspected that there might be a tendency of the users to be charitable when reporting availability, especially for vague requests like "browse fiction," so each user was encouraged to report holdings or shelf failures if there were not enough material to satisfy the demand according to the user's own criteria. Users were told, "If you don't find what you are looking for, please say 'no' (to questions on availability)." The interview was conducted to encourage users to be as specific as they could about the type of demand they had, and as critical as possible on availability.

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*The author wishes to thank the board of directors of the library for permission to conduct this survey, and acknowledges the assistance and cooperation of Bruce Barkley and Judith Drescher.

Sampling

Because the interviewer was not an employee of the library and could not be physically present at the library for entire days, a more concentrated interviewing schedule than the one suggested in the text was used. Interviews were conducted every day for approximately two hours. A sample size of 400 was selected as affording enough information for a reasonable test of the instrument, so a method to achieve 100 interviews per week for four weeks was needed. The library supplied daily user traffic statistics that revealed approximately 700 patrons per day. Since no hourly figures were available, the mean number of users per hour was estimated from the daily figures. The mean was 64 per hour on weekdays and 85 per hour on weekends, but some Sundays experienced as many as 99 users per hour. Allowing five minutes per interview, a maximum of 12 interviews per hour could be conducted, which would imply every fifth user on weekdays and every seventh on weekends. Since the researcher and the library decided that the instrument was not really appropriate for children, and since it was suspected that children constitute a larger proportion of the weekend traffic, an estimate of every sixth person was decided for each hour of sampling. The hour of sampling for each day was determined with a die and coin as outlined in the text, and the die was used to determine which of the first six users would be interviewed each day.

As it turned out, the choice of every sixth adult was a good maximum estimate for usage, for the limit of 24 interviews in a two-hour period was reached only twice. Although the interviews themselves did not usually take longer than a minute, on days that the load reached twelve per hour, it was hard to keep track of patron traffic. The result of the procedure was satisfactory from the point of view of the interviewer's time, for most questionnaires were returned before the end of the two-hour period, and the remaining ones were collected the next day. The choice of one interview period per day did, however, present a departure from a random sample, for Sunday users are overrepresented in the sample (16% of the sample, versus 10% in patron totals for October-December 1978). This is because weekday interview periods include many more slack times (4-5 interviews per hour) than weekends, when user traffic is denser. I found it impractical to interview more than once per day, so the result is that many weekdays are represented by a very small number of responses. The justification for this is that variations in user's demands seem more likely to differ by time of day than by day of the week, and capturing the responses of users who come to the library on weekday mornings when traffic is light is more important than representing weekday users as a group. This difficulty could be overcome by choosing shorter sampling times distributed throughout the day, but this option was logistically impossible. Since the principal objective of this survey was to test the method, randomness was sacrificed for convenience.

The researcher also decided that to economize interviewing time, users who refused to be interviewed would be recorded as having refused and the next user would be interviewed. The result is that patrons who entered the library at times when refusals were most likely (late afternoon and the noon hour accounted for all but three of the refusals) are also overrepresented. I also decided that because the number of users who come to the library several times per week is large, I would interview each user only once. On eight occasions the target user was one who had previously been interviewed, so the next one entering the building was chosen instead.

Results—Use of Materials

Table 1 presents the tabulation of number of patrons contacted, interviewed and counted as responses.

TABLE 1
PATRONS, CONTACTED, INTERVIEWED, COUNTED

Users contacted	442	
Refusals	29	Refusal rate 6.6%
Interviews	413	
Forms returned	401	Return rate 97.1%

Of those who refused to cooperate in the survey, only one refused out of principle ("I'm sick of surveys"). The rest were either in a hurry or did not want to be bothered, and they tended to cluster around late afternoon and the noon hour, when people can be expected to be hurried. It should be noted that all of the questionnaires which were not returned represent patrons looking for some kind of materials, since those who were not looking for materials were never asked to complete the availability questions.

Type of use made of the library facility is presented in table 2. The percentage of requests for individual items is considerably lower than estimates made in studies in universities as discussed in the text. Expressed as a percentage of users looking for materials, the number of users searching for known items amounts to 27.1%, which is considerably lower than the figure of 49.5% reported by Tagliocozzo and Kochen for Ann Arbor Public Library. The figure is, however, closer to that reported in the 1972 Grand Rapids Public Library study, where 20% of users were looking for known items. There may be many reasons for the low number of item requests. This library exists in a relatively small community served by a very large university library which may supply a larger fraction of research needs than the public library, so that requests which might otherwise be directed to the public library are instead handled at the university. It is also possible that a number of the class requests are in fact disguised item requests, where even the interviewer's prodding could not get the user to reveal some particular item desired, or where the user had some idea of the item in question, but could only remember the subject or type of material to which it belonged.

Users who request materials by type of material include the users who look for a subject of choice and those who browse among the different collections of the library. Few of those readers could specify an author that was particularly interesting to them, either in fiction or nonfiction, but fiction readers in particular browsed shelves in the several subdivisions of fiction shelving. One user said her strategy was to look first at recent fiction for new items of interest, then to proceed to the general fiction collection, where she started reading the As about 15 years ago. The obvious implication of this distribution of search strategies is that sections housing each type of material should be clearly marked.

TABLE 2
Type of Use

Use	*Number*	*% of all users*
Known item searches	74	18.5
Class of materials	199	49.6
Other	128	31.9

TABLE 3
Requests by Class or Type*

Type	*Number*	*% of all requests*
Particular author	17	4.2
Subject	85	21.2
Films	5	1.2
Records	17	4.2
Fiction	52	13.0
Nonfiction	85	21.2
Periodical	12	3.0
Mystery	14	3.5
Gothic	6	1.5
Science Fiction	9	2.2
Juvenile lit.	18	4.5
A-V equipment	5	1.2
Newspaper	2	0.5
Other	15	3.7

*These are users who specified class of materials, not items. Categories overlap, so percentages do not cumulate.

TABLE 4
Type of Material Sought

	Sought by class	*Sought by item*	*Total*	*% of all materials requests**
Fiction	52	16	68	24.9
Nonfiction	85	32	117	42.9
Periodical	12	7	19	7.0
Newspapers	2	11	13	4.8
Juvenile lit.	18	3	21	7.7
Films	5		5	1.8
Records	17	3	20	7.3

*Categories overlap so percentages do not cumulate.

The distribution between class and item requests is roughly the same regardless of material sought. The only real exceptions are newspaper requests, where most users specified which one was desired, and film requests, where access by individual item is virtually impossible. The proportion of requests for juvenile materials is undoubtedly too low, for no children were included in the sample. The juvenile materials requests reported here were made by adults.

The large number of users who were not looking for materials reflects the wide range of uses to which the public library facility is put. The largest single category of these "other" users is composed of users returning items to the library. As a group they represent successful previous searches, but tabulation of their materials requests is more efficient using circulation statistics.

TABLE 5
OTHER USES

	Number	*% of all users*
Return items	48	12.0
Place to study	9	2.2
Reference question*	6	1.5
General browsing	13	3.2
Use copy machine	16	4.0
Pick up reserved item	7	1.8
Attend meeting	4	1.0
Other (including meet friends, bring children)	25	6.2
Total	128	31.9

*Many reference questions are probably buried in subject requests reported by users.

Results—Materials Availability

The holdings rate, shelf rate, and availability rate for classes of materials and for items was calculated according to the instructions presented in the text.

Item Holdings Rate

	Sought	Owned	Not owned
Items	74	64	10
		(86.5%)	(13.5%)

Item holdings rate = 0.865 ±0.078*

Item shelf rate

	Owned	On shelf	Not on shelf
Items	64	47	17
		(73.4%)	(26.6%)

Item shelf rate = 0.734 ±0.108

Item availability rate

$0.865 \times 0.734 = 0.635 \pm 0.110$

•Confidence interval at 95% confidence level, as are all intervals reported.

The size of the original sample and the percentage of item requests combined to produce a number of item requests below the level desired for reliable results. A confidence interval in the range of ±0.05 would have been preferred, but with the proportion of item requests at 18.5%, an original sample size of 1892 would be required to get the 350 item requests necessary to reduce the confidence interval to 5%. Nevertheless, the estimate of availability of items is within the expected range of availability, judging from other studies of availability, and is certainly above 50%. Kantor's estimate of a "typical" availability score of 0.57 is consistent with the estimate for Champaign.

Class holdings rate

	Sought	Owned	Probably Owned•	Probably Not owned	No response
Classes	199	183 (94.8%)	4 (2.1%)	6 (3.1%)	6

Class holdings rate = 0.948 ± 0.031.

•"Probably owned" includes subject requests for materials in a form other than that held by the library on that subject. For example, the user wants an entire book, and the library holds only a general work including the subject requested and others.

Class shelf rate

	Owned	On shelf	Not on shelf
Classes	183	156 (85.2%)	27 (14.8%)

Class shelf rate = 0.852 ± 0.051

Class availability rate

$0.948 \times 0.852 = 0.808 \pm 0.056$

As expected, the availability estimate for classes of items is higher than the estimate for individual items. This is due to the facts that the library holds more than one item on most subjects, and that many of the requests are rather vague. The concept of "class" includes requests as specific as "illustrations of flowers, especially of one called scarlet pimpernel" and as general as "fiction." The inclusion of specific and vague requests can be expected to imply a higher availability rate than for specific requests alone, but to counteract this implication is the instruction to users to report a failure if there were nothing on the shelves they wanted. Failures include science fiction readers who found nothing that struck their fancy, as well as users who wanted something very specific, such as "a film on industrial safety." These two tendencies counterbalance each other. The interpretation of class availability should be that it is the probability that users looking for some type of material which includes more than one item will find enough of that material to satisfy their request on the shelf. Considering that certain kinds of requests will cluster at a given time (this was a springtime sample with four requests for gardening books, and included two requests for Greek mythology on the same night—for a class assignment), a performance of 80% is certainly respectable. In the case of class

availability, the confidence interval is narrower due to the larger sample size and higher estimate of availability, and lends greater reliability to the result.

The Champaign library has taken some steps to improve availability of classes of items. Limits are set on the number of items of certain types that may be borrowed by one person at one time. For example, the library limits the number of nonfiction books on any one subject (defined as having the same Dewey number before the decimal). This particular policy certainly increases the likelihood that subsequent users will find something on the shelves. An option that could be considered within an automated circulation system (not really practical for a manual system) is to relate the number of volumes allowable on any subject to the demand for that subject, much as Buckland has suggested altering circulation for items in high demand. Another possibility would be to reduce the loan period for high-demand subjects or types of material, or a combination of limiting both numbers to be circulated and loan period. One patron complained that the limit of three books on any subject was unfair to him, because he was interested in materials that had not circulated in years. Within the manual circulation system now in operation (microfilm), fine-tuning of circulation policies by individual subjects is not really possible, but with automation, high- or low-demand subjects could be flagged for changes in policy as well as for acquisition of new materials.

Table 6 presents failures in selected types of material reported by users who requested these by class and by item. These figures are presented for purposes of illustration only; no significance should be attached to failure rates for any particular class, because the numbers involved are simply too small to produce reliable availability estimates. Failures reported in table 6 are translated into availability rates in table 7.

TABLE 6

	Searched by type	*Type not owned*	*Type not on shelf*	*Searched by item*	*Item not owned*	*Item not on shelf*
Fiction	52	2 (3.8)[1]	4 (7.7)	16	2 (12.5)	7 (43.8)
Nonfiction subjects	85	9 (10.6)[2]	18 (21.2)	32	6 (18.8)	2 (6.3)
Periodical[3]	12	0	1 (8.3)	7	1 (14.3)	2 (28.6)
Newspapers[3]	2	0	0	11	0	2 (18.2)
Records	17	0	4 (23.5)	3	0	3 (100.0)
Juvenile	18	0	0	3	0	0

1. Figures in parentheses are failure percentages for kind of material searched in way specified.
2. Includes material listed as "probably owned" in presentation of class holdings rate.
3. For newspapers and periodicals "not owned" means title not owned, and "not on shelf" means issue was in use or (in case of recent issue) not received by the library, and perhaps not published yet.

TABLE 7
Availability by Kind of Material

	CHR	*CSR*	*CAR**	*IHR*	*ISR*	*IAR*
Fiction	0.96	0.92	0.88	0.88	0.50	0.44
Nonfiction	0.89	0.76	0.68	0.81	0.92	0.75
Periodical	1.00	0.92	0.92	0.86	0.67	0.57
Newspapers	1.00	1.00	1.00	1.00	0.82	0.82
Records	1.00	0.76	0.76	1.00	0.00	0.00
Juvenile	1.00	1.00	1.00	1.00	1.00	1.00

*Confidence interval for fiction is ±0.09; for nonfiction, ±0.10. The rest of the figures represent too small a number for any reliability.

As expected, the number of failures increases as requests become more specific. The number of failures for item requests for fiction is particularly noteworthy. This is due to the number of requests for recent fiction and best sellers the library receives. In the case of fiction, all the items reported as not owned were either on order or under consideration for order at the time of the survey. The library provides a rental collection of recent best sellers for those who are willing to pay not to wait for high-demand items. Two of the shelf failures for fiction represent users who were unwilling to pay the rental fee. Both were on reserve or hold lists for the items they sought. The library maintains an active reserve program to supply items to users, and fills some 600 requests per month by calling the user when the item requested is available.

Users with specific requests are also more likely to bring failures to the attention of the library staff. Users who did not find materials owned or on the shelf were asked if they had asked a staff member about their request. This was done to reduce the amount of checking the researcher would have to do to verify failures, but it also produced results interesting in their own right (see tables 8 and 9).

TABLE 8
Materials not Owned

	Not owned	*Asked staff*	*% Asking staff*
Class search	10	5	50
Item search	10	7	70

Although these numbers are too small for statistical reliability, they suggest that users are about as likely to bring shelf failures as collection failures to the attention of the staff (usually to reserve an item), but the results also indicate that item searches are more likely to be brought to the attention of the staff than subject or

TABLE 9
MATERIALS NOT ON SHELF

	Not on shelf	*Asked staff*	*% Asking staff*
Class search	27	8	30
Item search	17	15	88

type-of-material searches if they result in failure. This may be because the reserve program is tailored to individual items, and users who search by type or subject do not go the extra step to identify specific items to put on hold, even when this step is specifically suggested to them (as it was in the case of this survey).

Finally, it is possible to break down failures by subject of inquiry. The results are presented in table 10. While some degree of confidence may be associated with the distribution of demands between subjects (± 6% in most cases), no significance should be attached to availability estimates within each subject group. Availability estimates are presented only for illustrational purposes, and suggest areas of further consideration. As pointed out in the text, this availability test was designed to provide a general picture of availability and suggest possible areas of concern. To establish reliable estimates for individual subjects would require further study.

Results—General Satisfaction

To fill the remaining space on the questionnaire, the library chose to ask users about their general satisfaction with the library and their general opinion about the availability of materials in the library (see table 11). Users were asked to respond to these questions based on their past experience with the Champaign library before they looked for their current demand. For scoring ease, users were offered only a "yes" and "no" option on the sheet, but some chose to enter some intermediate response (e.g., "at times"). For scoring purposes, any response other than an unqualified "yes" was scored as a negative response. There were nine users who were in the library for the first time and could not answer the question.

The results of this question confirm the interviewer's impression about the attitude of the users toward the library's service. Only 3% of the users said they were generally unhappy with the library. Of the 25 users who responded "no" to either question, only 5 answered "no" to both, which suggests that opinions about the document delivery performance of the library are not closely related to general satisfaction (although the researcher believes that if availability estimates had been lower than the 80% level, a closer relationship between these two response categories would have been discovered).

Results—Cost

One of the primary goals of this pilot study was to estimate the actual cost of collecting responses, scoring answers and tabulating results of the survey. The

TABLE 10
FAILURES BY SUBJECT

	Type	*Failures*	*Item*	*Failures*	*Total*	*Failures*	*Availability*
Encyclopedias/Indexes			2	0	2 (1.6)*	0	1.00
Sociology/Psych./ Anthrop./Educ.	4	2	5	5	9 (7.3)	7	0.22
Business/Economics	9	4	12	2	21 (16.9)	6	0.71
Religion/Mythology	2	1	4	2	6 (4.8)	3	0.50
Public health/safety	3	1			3 (2.4)	1	0.67
Health/Medicine	4	2†			4 (3.2)	2	0.50
Agriculture/ Gardening	5	1			5 (4.0)	1	0.80
Science/Math/ Engineering	7	0	1	0	8 (6.5)	0	1.00
Recreation/Sports	2	0	3	1	5 (4.0)	1	0.80
Automotive	3	1			3 (2.4)	1	0.67
Cooking/Nutrition	3	1			3 (2.4)	1	0.67
Home repair/ Decorating	7	2	1	0	8 (6.5)	2	0.75
Photography/Arts	6	0	1	0	7 (5.6)	0	1.00
Crafts/Hobbies	3	1	2	0	5 (4.0)	1	0.80
Music/Dance	3	0	1	0	4 (3.2)	0	1.00
English language	3	0			3 (2.4)	0	1.00
Foreign language	1	1			1 (0.8)	1	0.00
Genealogy/History	9	6	3	0	12 (9.7)	6	0.50
Travel	8	2	4	1	12 (9.7)	3	0.75
Biography	3	2			3 (2.4)	2	0.33

*Numbers in parentheses represent percentage of total demand.
†Users wanted circulating copies of reference books.

objective was to develop a managerially useful tool that could be administered with relative ease and minimal cost. Users were interviewed and given a short questionnaire so that a high rate of questionnaire return could be achieved. Later, the forms were punched and coded for keysort scoring to enable quick and accurate tabulation of results. It was intended that interviewing, collecting responses and coding

TABLE 11
PATRON SATISFACTION

	Yes	*No*	*First time*	*No response*
Looking for item				
Usually find?	61	9	3	1
	(87)*	(13)		
Generally satisfied	68	3	3	
	(96)	(4)		
Looking for class				
Usually find?	179	13	6	1
	(93)	(7)		
Generally satisfied	187	5	6	
	(97)	(3)		
Total				
Usually find?	240	22	9	2
	(92)	(8)†		
Generally satisfied	255	8	9	1
	(97)	(3)		

*Numbers in parentheses represent percentage of those responding.
†Confidence interval for satisfaction is ±3%.

responses could be done by clerical personnel or trained volunteers. Final tabulation and scoring was designed to be done by the researcher. The cost of this pretest is estimated to be:

Time:	50.00	hrs.	Administer questionnaire
	1.75	hrs.	Punch
	2.00	hrs.	Code
	53.75	hrs.	Clerical time @ $3.75 = $201.56
	1.0	hrs.	Calculate sampling
	3.5	hrs.	Scoring
	2.0	hrs.	Tabulation of results
	6.5	hrs.	Professional time @ $7.50 = $48.75
Materials: Printing 500 questionnaires			$17.00
Total			$267.31

This figure is probably inflated from what ordinarily might be expected in the clerical time aspect, because, as was suggested in the section on sampling, a relatively inefficient sampling technique was used. One that used more intervals (e.g., of one-half hour each) could be expected to achieve a higher interview-per-hour rate. On the other hand, the estimate may be low for professional time, because, although the figure represents the actual time it took to calculate availability rates and distribution of demand, the researcher was probably more familiar with the procedure than someone doing this for the first time. The estimate

presented is the cost of the basic tabulation of the results of item and class availability, type of use, and the questions on general expectations and satisfaction. The additional breakdowns by subject and type of request took approximately five more hours to tabulate. Because the number of questions was greater than on the form outlined in the text, a more complicated scoring procedure was used. Copies of the questionnaire and the keysort coding scheme used follow.

Champaign Public Library and Information Center

Materials Available: Survey

The library is conducting this survey with the help of the Graduate School of Library Science to find out how well we meet your demands for materials. Please answer the questions that apply to you.

1. Did you come to the library for some particular item?

___Yes. ___No. Please turn this sheet over and go to question 6.

Please write down the name of the item.

_____

2. Do you usually find what you want in the library?

___Yes. ___No.

3. Are you generally satisfied with the library?

___Yes. ___No.

4. Does the library own the item you came in for today? (For example is it listed in the catalog, or in the magazine list?)

___Yes. ___No. Did you ask a staff member about this item? __Yes __No.
If you would like the library to try to get it, please ask the staff at the Reference Desk.

5. Was the item on the shelf?

___Yes. ___No. Did you ask a staff member about this item? __Yes __No.
If you would like the library to hold the item for you and call you when it is available, please ask the staff at the Reference Desk.

Thank you for your cooperation.

6. Did you come into the library looking for a certain kind of material?

___Yes. Please describe what you want. ___No. Thank you for your cooperation.

Works by_____ (author)

Works about_____ (subject)

___Film ___Fiction ___Mystery

___Record ___Non-fiction ___Gothic

___Art print ___Periodical ___Western

___Other_____ ___Science fiction

7. Do you usually find material you want in the library?

___Yes. ___No.

8. Are you generally satisfied with the library?

___Yes. ___No.

9. Does the library own the material you came in for today?

___Yes. ___No. Did you ask a staff member about this material? ___Yes ___No.
If you would like the library to try to get it, please ask the staff at the Reference Desk.

10. Was the material on the shelf?

___Yes. ___No. Did you ask a staff member about this material? ___Yes ___No.
If you would like the library to hold this material for you and call you when it is available, please ask the staff at the Reference Desk.

Thank you for your cooperation.

(coding for users requesting materials)

Champaign Public Library and Information Centrr

Materials Available: Survey

The library is conducting this survey with the help of the Graduate School of Library Science to find out how well we meet your demands for materials. Please answer the questions that apply to you.

1. Did you come to the library for some particular item?

   ___Yes. ___No. Please turn this sheet over and go to question 6.

   Please write down the name of the item.

   _____

2. Do you usually find what you want in the library?

   ___Yes. ___No.

3. Are you generally satisfied with the library?

   ___Yes. ___No.

4. Does the library own the item you came in for today? (For example is it listed in the catalog, or in the magazine list?)

   ___Yes. ___No. Did you ask a staff member about this item? ___Yes ___No. If you would like the library to try to get it, please ask the staff at the Reference Desk.

5. Was the item on the shelf?

   ___Yes. ___No. Did you ask a staff member about this item? ___Yes ___No. If you would like the library to hold the item for you and call you when it is available, please ask the staff at the Reference Desk.

Thank you for your cooperation.

6. Did you come into the library looking for a certain kind of material?

___Yes. Please describe what you want. ___No. Thank you for your cooperation.

Works by_____ (author)

Works about_____ (subject)

___Film ___Fiction ___Mystery

___Record ___Non-fiction ___Gothic

___Art print ___Periodical ___Western

___Other_____ ___Science fiction

7. Do you usually find material you want in the library?

___Yes. ___No.

8. Are you generally satisfied with the library?

___Yes. ___No.

9. Does the library own the material you came in for today?

___Yes. ___No. Did you ask a staff member about this material? ___Yes ___No.
If you would like the library to try to get it, please ask the staff at the Reference Desk.

10. Was the material on the shelf?

___Yes. ___No. Did you ask a staff member about this material? ___Yes ___No.
If you would like the library to hold this material for you and call you when it is available, please ask the staff at the Reference Desk.

Thank you for your cooperation.

(coding for other users)

Champaign Public Library and Information Center

Coding other users of the library will respond:

Materials Available: Survey

The library is conducting this survey with the help of the Graduate School of Library Science to find out how well we meet your demands for materials. Please answer the questions that apply to you.

1. Did you come to the library for some particular item?

___Yes. X No. Please turn this sheet over and go to question 6.

Please write down the name of the item.

_____

2. Do you usually find what you want in the library?

___Yes. ___No.

3. Are you generally satisfied with the library?

___Yes. ___No.

4. Does the library own the item you came in for today? (For example is it listed in the catalog, or in the magazine list?)

___Yes. ___No. Did you ask a staff member about this item? __Yes __No. If you would like the library to try to get it, please ask the staff at the Reference Desk.

5. Was the item on the shelf?

___Yes. ___No. Did you ask a staff member about this item? __Yes __No. If you would like the library to hold the item for you and call you when it is available, please ask the staff at the Reference Desk.

Thank you for your cooperation.

6. Did you come into the library looking for a certain kind of material?

___Yes. Please describe what you want. X No. Thank you for your cooperation.

Works by_____ (author)

Works about_____ (subject)

___Film ___Record ___Art print ___Other_____

___Fiction ___Non-fiction ___Periodical

___Mystery ___Gothic ___Western ___Science fiction

7. Do you usually find material you want in the library?

___Yes. ___No.

8. Are you generally satisfied with the library?

___Yes. ___No.

9. Does the library own the material you came in for today?

___Yes. ___No. Did you ask a staff member about this material? ___Yes ___No.
If you would like the library to try to get it, please ask the staff at the Reference Desk.

10. Was the material on the shelf?

___Yes. ___No. Did you ask a staff member about this material? ___Yes ___No.
If you would like the library to hold this material for you and call you when it is availab'e, please ask the staff at the Reference Desk.

Thank you for your cooperation.

SCORING SHEET

Day _____ Date _____ Time _____

N = _____

No. Item _____
No. Type _____
No. Other _____

	Type	*Item*
Author		
Subject		
Film		
Record		
Art print		
Fiction		
Nonfiction		
Periodical		
Mystery		
Gothic		
Western		
Science fiction		
Other		

Items: usually find _____
Items: generally satisfied _____
Item owned _____
Item on shelf _____

Type: usually find _____
Type: generally satisfied _____
Type owned _____
Type on shelf _____

Items:	*Types:*
% items _____	% types _____
% find _____	% find _____
% satis. _____	% satis. _____
% owned _____	% owned _____
% shelf _____	% shelf _____

Other Uses:

Return items _____
Place to study _____
Reference question _____
Browsing _____
Use copy machine _____
Pick up reserve _____
Meeting _____
Other _____

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1. A good general list of services expected of public libraries is provided *in* Arthur Jones. "Criteria for the Evaluation of Public Library Services." *Journal of Librarianship* 2(Oct. 1970):228-45. Delivery of documents is second on his list. Several surveys have been designed for general evaluation of library service. For a model, *see* Chwe, Steven Seokho. "Model Instrument for the User-Rating of Library Service." *California Librarian* 39(April 1978):46-55. A large array of surveys is presented *in* M.G. Fancher Beeler, et al. *Measuring the Quality of Library Service: A Handbook*. Metuchen, N.J.: Scarecrow Press, 1974. (Includes some of the other surveys mentioned in notes below.)

2. Burns, Robert W., Jr. "Library Use as a Performance Measure: Its Background and Rationale." *Journal of Academic Librarianship* 4(March 1978):7-9. (Burns presents a list of 16 specifications for a good study.)

3. Goehlert, Robert. "Book Availability and Delivery Service." *Journal of Academic Librarianship* 4(Nov. 1978):368.

4. The literature on availability of library materials is very large and growing rapidly. A brief treatment of the purposes of such studies and an evaluation of the most important ones is found *in* Michael Buckland. "The Management of Libraries and Information Centers." *Annual Review of Information Science and Technology* 9(1974):335-79, esp. pp. 342-49. Burns, "Library Use..." is a good recent survey of the field. For older literature on the subject, *see* Atkin, Pauline. "Bibliography of Use Surveys of Public and Academic Libraries, 1950-November 1970," *Library and Information Bulletin*, no. 14 (London: Library Association, 1971). The most widely known study of public libraies is DeProspo, Ernest R., et al. *Performance Measures for Public Libraries* (Public Library Association, 1973). The definition of holdings rate, shelf rate, and availability rate used in this study correspond to "probability of ownership," "availability of books owned probability," and " probability of availability" as presented in the DeProspo study. A recent contribution that more fully analyzes the complexity of the availability problem is Kantor, Paul B. "Availability Analysis." *Journal of the ASIS* 27(Sept.-Oct. 1976):311-19. Kantor shows availability is determined by item ownership, use and ability of users to find materials in the library. He estimates probabilities for each of these factors. A brief critique of the design of availability surveys and their usefulness to libraries is *in* Daniel Gore. "The Mischief in Measurement." *Library Journal* 103(May 1978):933-37. (This handbook was developed in part as a response to Gore's criticisms.)

5. The studies of Urquhart and Schofield and the works of Orr are most widely known. They are discussed below.

6. This is the method used by Orr in the development of the document delivery test, which he developed for the evaluation of medical library holdings and shelf availability. *See* Orr, Richard H., et al. "Development of Methodological Tools for Planning and Measuring Library Services, II: Measuring a Library's Capability of Providing Documents." *dulletin of the Medical Library Association* 56(Jan. 1968):241-67. The DeProspo methodolog / is similar, but for public libraries the subject area of materials could not be restricted, so DeProspo used a sample of books listed in *Book Publishing Record* as a standard. A manual has been developed that describes the procedure in detail. *See* Altman, Ellen, et a'. *A Data Gathering and Instructional Manual for Performance Measures in Public Libraries*. Chicago: Celadon Press, 1976.

7. The dangers of choosing a standard inappropriat[illegible] the institution to be studied are described *in* Orr, "Development of Methodological To[illegible]," p. 249. Orr shows that the sample drawn to measure the collection of academic medical libraries was probably inappropriate for nonacademic medical libraries.

8. There have been a large number of surveys that have approached user demands directly. Kantor's study, "Availability Analysis," asked users to write down call numbers of works sought and indicate if they were found or not. Line used a similar method; *see* Line, Maurice B. "The Ability of a University Library to Provide Books Wanted by Researchers." *Journal of Librarianship* 5(Jan. 1973):37-51. Urquhart and Schofield asked users to leave slips of paper on the shelves where books they sought ought to have been, and attempted to

compare the number of failures tabulated to the number of works sought. *See* Urquhart, John A., and Schofield, J.L. "Measuring Readers' Failure at the Shelf." *Journal of Documentation* 27(Dec. 1971):273-86; and _____. "Measuring Readers' Failure at the Shelf in Three University Libraries," *Journal of Documentation* 28(Sept. 1972):233-41. Other studies that have used this approach are cited in the section "Interpretation of Results."

9. Lancaster argues that a survey of actual demands should be preferred for the evaluation of an individual library, since actual demands will be more likely to represent information needs of users of that library than some standard list. But if some list could be carefully constructed to represent a library's users, it would measure latent as well as actual demands. *See* Lancaster, F. Wilfrid. *The Measurement and Evaluation of Library Services*. Washington, D.C.: Information Resources Press, 1977, p. 237.

10. Orr, Richard H. "Measuring the Goodness of Library Services: A General Framework for Considering Quantitative Measures." *Journal of Documentation* 29(Sept. 1973):325-26.

11. This is essentially the same reason reported *in* Orlando Behling and Kermit Cudd. "A Library Looks at Itself." *College & Research Libraries* 28(Nov. 1967):416-22. They reported a response rate of 55% out of 1230 questionnaires. Charles B. Millham was forced to argue that none of his results were significant because of a low return rate of questionnaires—60%; see *Survey of Public Library Utilization, State of Washington, December 1974*. Olympia, Wash.: Washington State Library, 1975.

12. Smith, Rita Hoyt, and Grenade, Warner. "User and Library Failures in an Undergraduate Library." *College & Research Libraries* 39(Nov. 1978):467-73, reports use of an initial interview to increase user cooperation at the University of Tennessee. Even with this contact they were able to increase the return rate of questionnaires to only 495 out of 1000.

13. The analogy Gore used to describe the diary project he devised was that of the thermometer. He wanted only enough information to detect if a problem existed, obtained as cheaply as possible. *See* Gore, "Mischief," p. 934.

14. This figure of 0.998 would be precisely true only if the demand for the five items were independent of each other. Since it is a class, the demand is not independent, and the actual figure will depend on how similar the items are. The figure will still be higher than for items alone.

15. Tagliacozzo, R., and Kochen, M. "Information-Seeking Behavior of Catalog Users." *Information Storage and Retrieval* 6(Dec. 1970):366.

16. University Grants Committee. *Report of the Committee on Libraries*. London: HMSO, 1967. (Cited *in* Atkin, "Bibliography," pp. 18-19); Rzasa, Philip V., and Moriarty, John H. "The Types and Needs of Academic Library Users; A Case Study of 6568 Responses." *College & Research Libraries* 31(Nov. 1970):403-09. These reports demonstrate the different types of requests made by graduate students, undergraduates and faculty.

17. Lipetz, Ben-Ami. "Catalog Use in a Large Research Laboratory." *Library Quarterly* 42(Jan. 1972):135.

18. *User Survey of the New York Public Library: Research Libraries*. New York: Nelson Associates, Inc., 1969, p. A-43. The figures for general users are: item—58.2%; subject—39.2%.

19. Tri-County Regional Planning Commission. *Survey of Public Libraries: Summit County, Ohio*. Akron: 1972, p. 42. These are percentages of all users, not just users looking for materials as in the catalog use studies.

20. Bird, Margaret, et al. *Public Library Use Study*. Grand Rapids, Mich.: Grand Rapids Public Library, 1972.

21. The Summit County, Ohio, study, for example, found that only 27% of the users surveyed used the catalog while 42% borrowed books; *see* Tri-County Regional Planning Commission, p. 43. Hyman, Richard J. *Access to Library Collections; An Inquiry Into the Validity of Direct Shelf Approach with Special Reference to Browsing*. Metuchen, N.J.: Scarecrow Press, 1972, presents a historical survey of attempts to cope with browsers. A model for shelf arrangement to accommodate browsers based on search theory developed for submarine warfare may be found *in* Philip Morse. "Browsing and Search Theory." *Toward a Theory of Librarianship: Papers in Honor of Jesse Hauk Shera*, edited by Carl H. Rawski, pp. 246-61. Metuchen, N.J: Scarecrow Press, 1973. (Actual research into how browsers approach libraries is needed.)

22. The description of the method and the examples used in the text are drawn from Drott, M. Carl. "Random Sampling: A Tool for Library Research." *College & Research Libraries* 30(March 1969):119-25. (The literature on sampling is very large and complex. The approaches presented in the text have been simplified.)

23. For a *yes-no* distribution such as the availability of materials, the relationship of sample size, confidence interval and probability of availability is given by the formula:

$$z\sqrt{\frac{p(1-p)}{n}} = a,$$

where:

a = confidence interval, or interval or error to be tolerated, as in ± 4%,
n = size of sample,
p = probability of availability,
z = number of standard deviations of the normal distribution associated with the confidence level desired. The usual confidence levels used in social research are 90% (i.e., 1 out of 10 samples would produce a result outside of the confidence interval desired) where $z = 1.645$; and 95% where $z = 1.96$.

Mendenhall, William, and Schaeffer, Richard L. *Mathematical Statistics with Applications*. North Scituate, Mass.: Duxbury Press, 1973, pp. 279-83. (A correction factor is needed if the size of the sample is larger than 20% of the population to be sampled, but is ignored here.)

If p is not known, an approximate value may be entered. An estimate of 0.5 yields the maximum sample size. For this estimate, the sample size needed at the confidence interval and confidence level specified are tabulated:

p = 0.5

	Confidence level	
	0.90	0.95
±5%	n = 271	385
±4%	423	601
±3%	752	1067
±2%	1692	2401

24. Kantor, "Availability Analysis," gives a good analysis of the difficulty in sorting out library and user error. He discusses the broader conceptual background of this kind of analysis and derives his model *in* "The Library as an Information Utility in the University Context: Evolution and Measurement of Service." *Journal of the ASIS* 27(March-April 1976):100-12.

25. Kantor has estimated that a maximum of 10 requests per hour can be followed up so if the researcher decides to follow this procedure, no more than 20 responses per hour should be collected. *See* Kantor, "Availability Analysis," p. 314.

26. The strategies for improving materials availability by changing the length of loan period and duplicating copies of materials are discussed in detail *in* Michael K. Buckland. *Book Availability and the Library User*. New York: Pergamon Press, 1975, pp. 47-131. Gore has suggested a simple rule of thumb for duplication: if a book has been circulated more than four times in the last year, it should be considered for duplication. *See* Gore, Daniel. "Let them Eat Cake While Reading Catalog Cards: An Essay on the Availability Problem." *Library Journal* 100(15 Jan. 1975): pp. 93-98.

27. Tagliacozzo and Kochen, "Information-Seeking Behavior," p. 369.

28. Ibid., p. 373.

29. Gore, "Mischief," p. 934; and Lipetz, "Catalog Use," p. 136.

30. Line, "Ability of a University Library," p. 4; Urquhart and Schofield, "Failure at Shelf in Three University Libraries," p. 237; Smith and Grenade, "User and Library Failures," p. 471; and Goehlert, "Book Availability," p. 369.

31. Goehlert, "Book Availability and Delivery Service," p. 369; Mavor, Anne S., and Vaughan, W.S., Jr. *Development and Implementation of a Curriculum-Based Information Support System for Hamline University*. Landover, Md.: Whittenburg, Vaughan Associates, Inc., 1974. (Cited *in* Lancaster, *Measurement and Evaluation*, p. 224); and Kantor, "Availability Analysis," p. 317.

32. Gore, "Mischief," pp. 934-35.

33. Kantor, "Availability Analysis," p. 318.

34. Tri-County Regional Planning Commission, *Survey of Public Libraries*, p. 45.

35. Bird, "Public Library Use Study."

36. Schlessinger, Bernard S. *Users and Uses of the New Haven Free Public Library*. New Haven, Conn.: 1972, p. 50.

VITA

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